

ESTABLISHING A LEAD AND COPPER SITE SAMPLING PLAN **FOR COMMUNITY PUBLIC WATER SYSTEMS**

INTRODUCTION

The Lead and Copper Rule was published on June 7, 1991. This rule puts the responsibility of providing water that is non-corrosive to lead and copper upon the water retailer. It mandates that water systems implement an intensive monitoring program.

Because of lead's adverse effects on the human body and because it is currently difficult to identify a clear threshold below which there are no risks of adverse health effects, the U.S. Environmental Protection Agency (EPA) has established a maximum contamination level goal (MCLG) of zero. A maximum contamination level (MCL) has not been established. What will be used is an "action level," the level at which some type of treatment is required. These action levels are:

Lead = .015 mg/l (15 ppb) in more than 10% of monitored taps.

Copper = 1.3 mg/l (1,300 ppb) in more than 10% of monitored taps.

THE FIRST STEP

Since sample sites must be selected from homes with specific types of plumbing, a review of the following information may help the system identify sample sites:

- Plumbing codes, building and plumbing permits
- Records of inspections of service connections, commercial, and residential inspections
- Existing water quality information that may indicate susceptibility to high lead or copper concentrations

Sampling sites may also be located when meters are read or maintenance activities are performed. An explanation of the Lead and Copper Rule and a request for sampling sites in the local news media might also turn up high-risk sites.

Samples taken must be 1 liter of tap water collected from kitchen or bathroom faucets as first draw samples in plumbing that hasn't been used for a minimum of 6 hours at high risk locations.

High-risk locations include structures that:

- Contain lead solder installed after 1982
- Have lead pipes
- Have exterior lead service lines

WHERE SAMPLES MUST BE TAKEN

Each community water system shall attempt to fill its sampling pool with tier 1 sampling sites.

1. **Tier 1 sampling sites** consist of single family structures that:

- Contain copper pipes with lead solder installed after 1982 or contain lead pipes
- Are served by a lead service line.

When multiple-family residences comprise at least 20% of the structures served by a water system, the system may include these types of structures in its sampling pool.

If a system contains lead service lines, it is required to collect 50% of its samples from these sites. The rest of the samples should be taken from sites with lead solder. As a practical matter we realize most systems do not have lead service lines.

2. **Tier 2 sampling sites** consist of buildings, including multiple-family residences that:

- Contain copper pipes with lead solder installed after 1982 or contain lead pipes
- Are served by a lead service line.

3. **Tier 3 sampling sites** consist of structures that contain copper pipes with lead solder installed before 1983.

Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with tier 3 sampling sites.

4. **Exceptional cases** consist of community water systems that can document a lack of tier 1, 2, and 3 sampling sites and are classified as Category F1 and Category F2.

Category F1 sites are located in buildings with:

- Plastic pipes and brass fixtures
- Copper pipes with flare fittings and brass fixtures
- Galvanized pipes with brass fixtures
- Copper pipes with lead free solder and brass fixtures.

Category F2 sites are located in buildings with:

- A water softener

Note: Sampling sites should not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants. If a site has a water softener connected to the cold-water kitchen tap or bathroom sink tap, it should not be included in the sampling pool, unless no other sites are available.

Each community water system which does not complete its targeted sampling pool with tier 1 sampling sites shall send a letter justifying its selection of tier 3 or exceptional case category sampling sites to:

**Lead and Copper Manager
Missouri Department of Natural Resources
Public Drinking Water Branch
P.O. Box 176
Jefferson City, MO 65102**

Phone: 573-751-1406 Fax: 573-751-3110

HOW MANY SAMPLES

All public water systems are required to collect 1 sample for lead and copper analysis from each of the following number of sites during each 6-month monitoring period to fulfill a 1-year monitoring cycle, or a total of 2 periods.

SYSTEM SIZE (Number of people served)	SAMPLES (Number per 6-month period)
501 to 3,300	20
101 to 500	10
100 or less	5

After the initial monitoring year, the systems begin a yearly monitoring schedule at half the number of samples that were previously taken per each 6-month period (i.e., if you were taking 20 samples per 6-month period, you will reduce to 10 samples per year). This schedule will last for three years.

All the systems that do not exceed the lead and copper action levels for 2 consecutive 6-month monitoring periods or that maintain optimal corrosion control treatment may receive approval to reduce monitoring frequency.

WHO MUST COLLECT SAMPLES

The water system is responsible for collecting samples. The Lead and Copper Rule does allow the homeowner to draw the sample. Most systems ask customers to collect samples for convenience.